

Kungwe Apalis *Apalis [rufogularis] argentea*: a summary

Michael S. L. Mills^{a,b}, Audrey Msimanga^c, Alain Reygel^d and Michel Louette^d

L'Apalis de Moreau *Apalis [rufogularis] argentea* : une synthèse. L'Apalis de Moreau *Apalis [rufogularis] argentea* est confiné aux forêts submontagnardes du sud du Rift Albertin et des monts Mahale à l'ouest de la Tanzanie. Il est considéré soit comme une espèce à part entière (*A. argentea*, comprenant *A. a. eidos*), soit comme une (ou deux) sous-espèce(s) de l'Apalis à gorge rousse *A. rufogularis*. En plus de la confusion taxinomique, l'identification sur le terrain est gênée par le traitement inexact figurant dans les guides de terrain. En nous basant sur des observations directes, des photos, des spécimens et la littérature, nous examinons certaines de ces questions et présentons une synthèse des connaissances actuelles sur ce taxon. L'apparente absence de différences en ce qui concerne l'écologie, les mensurations et les vocalisations entre l'Apalis de Moreau et l'Apalis à gorge rousse, et les différences minimales de plumage, indiquent qu'il s'agit d'une seule espèce. Les différences entre *argentea* et *eidos* sont minimales, même pour la reconnaissance de sous-espèces. La meilleure façon d'identifier l'Apalis de Moreau sur le terrain et de le distinguer des sympatriques Apalis cendrée *A. cinerea* et Apalis à tête brune *A. alticola*, est de se baser sur les vocalisations car la couleur de la calotte (gris chez l'Apalis de Moreau) et du manteau (lavé de vert chez l'Apalis de Moreau) sont difficiles à observer chez une espèce qui occupe la canopée. Contrairement aux illustrations de la plupart des guides de terrain, la couleur de l'œil est brun rougeâtre tandis que le front et les lores ont la même couleur que le reste de la tête.

Summary. Kungwe Apalis *Apalis [rufogularis] argentea* is confined to lower montane forest in the southern Albertine Rift and the Mahale Mountains of western Tanzania. It is variously treated as a separate species (*A. argentea*, including *A. a. eidos*), or both these taxa are considered subspecies of Buff-throated Apalis *A. rufogularis*. To add to the taxonomic confusion, correct field identification is hampered by inaccurate treatment in field guides. Here we draw on field observations, photographs, specimen details and published literature to address some of these issues and summarise what is known of the taxon. The apparent lack of differences in ecology, biometrics and vocalisations between Kungwe Apalis and Buff-throated Apalis, and only very minor differences in plumage, suggest that they are conspecific. Differences between *argentea* and *eidos* are minimal, even for the recognition of subspecies. Field identification and differentiation from sympatric Grey Apalis *A. cinerea* and Brown-headed Apalis *A. alticola* is best based on vocalisations, as crown (grey in Kungwe Apalis) and mantle colour (washed green in Kungwe Apalis) are hard to observe in a canopy-dwelling species. Eye colour is reddish brown and the forecrown and lores are concolorous with the rest of the head, contrary to depictions in most field guides.

Kungwe Apalis *Apalis [rufogularis] argentea* is a locally distributed warbler of the family Cisticolidae, which occurs in the canopy of lower montane forest (1,200–2,350 m; Moreau 1943, Urban *et al.* 1997, Stevenson & Fanshawe 2002). It is confined to two small areas: the southern part of the Albertine Rift in the Democratic Republic of Congo, south-western Rwanda and Burundi, and the Mahale Mountains of far western Tanzania. As these areas are both relatively remote and little-visited by ornithologists and birdwatchers, Kungwe Apalis is poorly known in life and several controversies about it remain unresolved.

Its taxonomic status is contentious: *argentea* (including *eidos*) is sometimes treated as a full species (e.g. Hall & Moreau 1970, Collar & Stuart 1985, Clements *et al.* 2015, Ryan 2016, Gill &

Donsker 2016), although it is usually regarded as a subspecies of Buff-throated Apalis *A. rufogularis* (e.g. Short *et al.* 1990, Dowsett & Dowsett-Lemaire 1993, Dowsett & Forbes-Watson 1993, Urban *et al.* 1997, BirdLife International 2014, Dickinson & Christidis 2014). Differences between Kungwe Apalis and Buff-throated Apalis *sensu stricto* are minor, especially considering the degree of variation between males of the different subspecies of Buff-throated Apalis (Hall & Moreau 1962). This is confounded by the fact that much of the literature regarding Kungwe Apalis, and differences between it and Buff-throated Apalis, is incorrect.

In addition to the species-level controversy, one (*argentea*) or alternatively two subspecies (*argentea* and *eidos*) of Kungwe Apalis are

recognised. In the second case, *argentea* is confined to western Tanzania, with *eidos* in the Albertine Rift. However, no proper comparison has been made between the two taxa.

Finally, the correct field identification of Kungwe Apalis is hampered by inaccurate treatment in the literature.

During August 2013, MSLM spent ten days in Nyungwe National Park, Rwanda, on two separate visits. He searched for Kungwe Apalis widely and located just a single pair in lower-altitude forest in the Gisakura sector of the park. Recording and playback of its song enabled him to draw one bird closer to the ground in a forest clearing, to be photographed (Figs. 1a–c). Less than 300 m from this site, at the forest edge, he managed to attract Grey Apalis *Apalis c. cinerea* to be photographed (Figs. 2a–b). Based on these photographs and recordings, examination of specimens (especially by AM, AR & ML of the largest series, at the Royal Museum for Central Africa [RMCA], Tervuren, Belgium) and a review of available literature, we seek to address some of the aforementioned inconsistencies, outline what is known about Kungwe Apalis, and describe the juvenile plumage of *eidos* and age-related changes in morphology.

AR measured the tail length (from point of insertion of central tail feathers to max. length of longest rectrix), wing length (chord of unflattened wing), bill length (from end of central forehead feathering to tip of maxilla) and bill width (width of maxilla at base) of all specimens at RMCA (one *argentea*, 20 *eidos*) to the nearest 0.5 mm, to examine differences between the sexes of *eidos* and between male *argentea* and *eidos*. The *eidos* series includes two juveniles and three unsexed birds, leaving eight adult females and seven adult males. The bills and tails of some specimens are damaged, further reducing sample size. Appropriate T-tests, after testing for equal variances using F-tests, were applied to examine differences between sexes. Although it was impossible to test for differences between subspecies, we examine the likelihood of the single *argentea* specimen being from the same population as *eidos* males. All analyses were made using Excel.

History of collecting

The first specimens of Kungwe Apalis were collected in February 1939 on the upper Mulinga

River on Idjwi Island, in Lake Kivu, Democratic Republic of Congo (c.02°06'S 29°03'E) by Arthur Loveridge, who took four males and four females. These are now at RMCA (Louette *et al.* 2010) and the Museum of Comparative Zoology, Harvard University, Cambridge, USA (MCZ, including the type of *eidos*) (Table 1).

The first description of Kungwe Apalis, however, was based on a male collected on 3 August 1940 in forest on Mount Kungwe, above Ujamba in the Mahale Mountains of western Tanzania (c.06°11'S 29°53'E) by Salimu Asmani for Reginald Moreau. Based on this specimen, now at the Natural History Museum, Tring (NHMUK) and another male now at RMCA, Moreau (1941) described a new species *Apalis argentea*, supported by comments from Victor van Someren and James Chapin, who also examined the specimens.

The following year, Peters & Loveridge (1942) described another new species, *Apalis eidos*, based on the 1939 series from Idjwi Island. These were examined and compared with the Tanzanian specimens by Chapin, who considered them to be 'allied to *A. argentea*' but 'specifically distinct'. However, Mayr (1957) was not convinced of the differences and called for a revision of the genus before a final decision be made.

While most specimens collected since then have also come from Idjwi Island and the Mahale Mountains, other localities include the Lukolansala River (c.06°S 31°E) and near Mpanda (c.06°29'S 31°04'E) in western Tanzania, and Rugege Forest (= Nyungwe Forest, c.02°29'S 29°11'E) and Cyuraga (presumably Curaga, in Nyungwe Forest) in Rwanda (see Table 1 for details). The 39 specimens traced in various collections presumably constitute the bulk of collected material, with RMCA holding the largest series. Ten were collected on Idjwi Island in 1965, although only seven (three males, four females) were listed by Prigogine (1973), yet 12 (eight males, four females) by Prigogine (1976). It seems likely that the latter figure is correct ('3' may be a typo for '8' in Prigogine 1973), and that we have failed to trace two specimens from this series. The first description of the juvenile (*argentea*) was based on a specimen obtained in August 1958 near the type locality (Ulfstrand 1960).

Table 1. Specimens of Kungwe *Apalis* *Apalis argentea* traced in museum collections, listed in chronological order.

Tableau 1. Spécimens de l'*Apalis* de Moreau *Apalis argentea* identifiés dans des collections de musées, présentés en ordre chronologique.

Museum abbreviations are as follows / les abréviations des musées sont comme suit :

MCZ = Museum of Comparative Zoology, Harvard University, Cambridge, MA; RMCA = Royal Museum for Central Africa, Tervuren, Belgium; NHMUK = Natural History Museum, Tring, UK; NHMD = Natural History Museum of Denmark, Copenhagen; AMNH = American Museum of Natural History, New York; ZMUL = Lund Museum of Zoology; RBINS = Royal Belgian Institute of Natural Sciences, Brussels.

Other specimens may exist, and there are records from Bururi Forest in Burundi (Urban *et al.* 1997). Rugege Forest lies within Nyungwe National Park.

D'autres spécimens peuvent exister ; il y a également des mentions de la forêt de Bururi au Burundi (Urban *et al.* 1997). La forêt de Rugege se trouve dans le Parc National de Nyungwe.

Date	Museum reg. no.	Collector	Country: locality	Altitude
1939-02-17	MCZ 270939	A. Loveridge	DRC: Idjwi Island	1,800 m
1939-02-23	RMCA 43074	A. Loveridge	DRC: Idjwi Island	1,800 m
1939-02-27	MCZ 270940	A. Loveridge	DRC: Idjwi Island	1,800 m
1939-02-27	MCZ 270941	A. Loveridge	DRC: Idjwi Island	1,800 m
1939-02-28	MCZ 270942	A. Loveridge	DRC: Idjwi Island	1,800 m
1939-03-01	MCZ 270943	A. Loveridge	DRC: Idjwi Island	1,800 m
1939-03-01	RMCA 43075	A. Loveridge	DRC: Idjwi Island	1,800 m
1939-03-02	MCZ 270944	A. Loveridge	DRC: Idjwi Island	1,800 m
1940-08-03	NHMUK 1945.34.289	S. Asmani	TZ: Mahale Mountains	2,100 m
1940-08-03	RMCA 115125	R. Moreau	TZ: Mahale Mountains	2,100 m
1943-10-15	NHMUK 1945.34.294	R. Moreau	TZ: Mpanda	1,220 m
1943-11-29	NHMUK 1945.34.292	R. Moreau	TZ: Lukolansala River	1,310 m
1943-11-29	NHMUK 1945.34.291	R. Moreau	TZ: Lukolansala River	1,310 m
1943-11-29	NHMUK 1945.34.293	R. Moreau	TZ: Lukolansala River	1,310 m
1949-10-14	NHMD AVES-092656	T. Andersen	TZ: Mahale Mountains	–
1949-10-18	AMNH Skin-388035	T. Andersen	TZ: Mahale Mountains	–
1953-03-08	RMCA 74.44.A.1036	F. Hendricks	RW: Rugege Forest	–
1956-08-26	RMCA 82866	A. Fain	DRC: Idjwi Island	1,450 m
1956-08-26	RMCA 82881	A. Fain	DRC: Idjwi Island	1,450 m
1958-08-23	ZMUL L958/3104	S. Ulfstrand	TZ: Mahale Mountains	–
1958-08-24	ZMUL L958/3105	S. Ulfstrand	TZ: Mahale Mountains	–
1965-06-22	RMCA 112762	A. Prigogine	DRC: Idjwi Island	1,820 m
1965-06-24	RBINS 597045	A. Prigogine	DRC: Idjwi Island	–
1965-06-27	RMCA 112763	A. Prigogine	DRC: Idjwi Island	1,610 m
1965-06-27	RMCA 112769	A. Prigogine	DRC: Idjwi Island	1,620 m
1965-07-19	RMCA 112766	A. Prigogine	DRC: Idjwi Island	1,860 m
1965-07-20	RMCA 112761	A. Prigogine	DRC: Idjwi Island	1,860 m
1965-07-25	RMCA 112765	A. Prigogine	DRC: Idjwi Island	1,540 m
1965-07-27	RMCA 112768	A. Prigogine	DRC: Idjwi Island	2,000 m
1965-07-29	RBINS 597046	A. Prigogine	DRC: Idjwi Island	1,540 m
1965-07-29	RMCA 112764	A. Prigogine	DRC: Idjwi Island	1,540 m
1969-08-08	RMCA 119855	A. Prigogine	DRC: Idjwi Island	–
1969-08-08	RMCA 119859	A. Prigogine	DRC: Idjwi Island	–
1969-08-09	RMCA 119857	A. Prigogine	DRC: Idjwi Island	–
1969-08-09	RMCA 119858	A. Prigogine	DRC: Idjwi Island	–
1969-08-12	RMCA 119853	A. Prigogine	DRC: Idjwi Island	–
1969-08-18	RMCA 119856	A. Prigogine	DRC: Idjwi Island	–
1969-08-20	RMCA 119854	A. Prigogine	DRC: Idjwi Island	–
1978-03-05	RBINS 709400	A. Prigogine	RW – Cyuraga	–

Field identification of Kungwe Apalis

MSLM first noted the presence of Kungwe Apalis by its song, which, to his ear, cannot be distinguished from that of Buff-throated Apalis, as also noted by Dowsett-Lemaire (1990) and Dowsett-Lemaire & Dowsett (1990). It is, however, distinctly different from that of the sympatric Grey Apalis and Brown-headed Apalis *A. alticola*, with which it is most likely to be confused in the Albertine Rift and western Tanzania, respectively. As all three frequent the forest canopy, where the colour of their upperparts is difficult to see, song is the best means of distinguishing them. However, it is important to note that the only recording of Kungwe Apalis commercially available (Stevenson *et al.* 2014) is actually of a Grey Apalis, as agreed by B. W. Finch (*in litt.* 2016).

Kungwe Apalis is very similar in morphology to the slightly larger Grey Apalis (Figs. 1–2) and Brown-headed Apalis. Importantly, the eye colour of all three is reddish brown. The only plumage feature that clearly differentiates them is crown colour: grey in Kungwe Apalis and brownish grey in Grey and Brown-headed Apalis. Female Kungwe Apalis can also be differentiated from either sex of Grey and Brown-headed Apalis by its green wash to the wings and upperparts. However, both of these differences will be hard to see under normal circumstances, with the bird above eye level, so their usefulness as field characters is limited. Urban *et al.* (1997) and Sinclair & Ryan (2010) state that Kungwe Apalis has more white in the tail than Grey Apalis. However, in-hand examination of multiple specimens, side-by-side,



Figures 1a–c. Female Kungwe Apalis *Apalis argentea eidos*, Nyungwe National Park, Rwanda, 13 August 2013 (Tasso Leventis); note the red eye, whitish underparts and grey head characteristic of this taxon. The greenish wings and back indicate that it is a female. We believe that these are the first photographs of this taxon in the wild.

Apalis de Moreau *Apalis argentea eidos*, femelle, Parc National de Nyungwe, Rwanda, 13 août 2013 (Tasso Leventis) ; noter l'œil rouge, les parties inférieures blanchâtres et la tête grise caractéristiques de ce taxon. Les ailes et le dos verdâtres indiquent qu'il s'agit d'une femelle. Ces photos sont probablement les premières de ce taxon dans la nature.



Figures 2a–b. Grey Apalis *Apalis c. cinerea*, Nyungwe National Park, Rwanda, 9 August 2013 (Denzil Morgan); note the red eye, brownish-grey head and grey back.
Apalis cendrée Apalis c. cinerea, Parc National de Nyungwe, Rwanda, 9 août 2013 (Denzil Morgan) ; noter l’œil rouge, la tête gris-brun et le dos gris.

indicates that both species have the two outermost pairs of tail feathers all white, and that the only difference lies in the outer web of the third pair of feathers, which is entirely white in Kungwe Apalis versus white with a darker base in Grey Apalis (AR pers. obs.). We have not observed this slight difference in the field. Finally, the tail of Kungwe Apalis (male 45–52 mm, mean 49.5 mm; female 42–51 mm, mean 44.2 mm; this study) is shorter than that of Grey Apalis (male 52–65 mm, mean 60.3 mm; female 48–56 mm, mean 51.6 mm; Urban *et al.* 1997). However, there is at least some overlap in tail length and MSLM has failed to see any clear difference in the field (Figs. 1–2). This may be partly due to Grey Apalis being larger bodied than Kungwe Apalis, and tail length would be judged relative to body size.

Characters of Kungwe Apalis

Several erroneous statements have been made (and perpetuated) in the literature concerning the characters of Kungwe Apalis, which we now list here.

1. Eye colour: Stevenson & Fanshawe (2002), the leading field guide to the region, incorrectly

illustrate the eyes as being yellowish. This was followed by Sinclair & Ryan (2010). The eye is reddish brown (Fig. 1).

2. Forecrown and lores: Stevenson & Fanshawe (2002) write that the ‘whitish forecrown and lores give a pale-faced appearance’, and the illustration matches this. This again was followed by Sinclair & Ryan (2010). The forecrown and lores are concolorous with the rest of the head (Fig. 1).
3. Tail: according to Moreau (1941), Kungwe Apalis differs from all other *Apalis* ‘in the relatively more abrupt gradation of its outer tail-feathers’. However, the outer tail is no more abruptly graded than Buff-throated Apalis (BirdLife International 2014) and the feature has not been mentioned since the type description, not even in the type description of *eidos* (Peters & Loveridge 1942).

Some features are not well known.

4. Juvenile *argentea*: Ulfstrand (1960) stated that this plumage differs from adults primarily in having a pronounced greenish tinge to the grey upperparts, especially on the wing-coverts and

top of head. The underparts are pale yellowish grey, and the iris brown compared to the reddish-brown iris of the adult.

5. Male plumage changes with age in *eidos*. The juvenile plumage of *eidos* has not previously been described. AM & ML examined all specimens in RMCA, using the extent of skull ossification to age birds. Colours follow Smithe (1983). Head: grey (closest to colour 84: medium neutral grey) in all except what appears to be the youngest bird (RMCA 112766; softest skull) in which the grey head is washed olive-green. Back: the extent of green varies greatly between specimens, ranging from a slight hint of green on the lower back and rump in older birds (RMCA 112761, 119854, MCZ 270942), through green on the upper and lower back (RMCA 43075 paratype), to green extending right up to the edge of the grey nape (RMCA 112762) and green on the entire back grading into the crown of the youngest bird (RMCA 112766). Throat: generally pale grey in younger birds, becoming white in the centre and grey only on the sides in older birds. Underparts: in older birds (RMCA 112761, 119854) the chest is white in the centre and grey on the sides and flanks. The younger birds all have dirty white bellies washed yellow (closest to 56 straw yellow) on the flanks, while older birds (RMCA 112761, 119854, MCZ 270940—age not determined) lack any yellow on belly or flanks. The colour of the belly of the latter two birds seems to correspond to that of three adults examined—all three lack any yellow on belly or flanks, with grey on the throat- and breast-sides and flanks. Tail: the pattern on the upperside varies individually between males. In some specimens the entire surface of the middle pair of rectrices is brown, while in others (e.g. MCZ 270942) the central pair have dusky tips and T5 (the adjacent pair) has a dusky outer half to the web.
6. Variation in females. Head: the amount of olive-green (colour 47, olive-green auxiliary) on the head and back varies individually, from most obvious and intense in youngest birds to much less olive-green in older individuals, especially on the crown. In what seems to be the youngest female in the collection (RMCA

119858, skull completely unossified), the forehead, crown and back are generously washed olive-green. In paratype RMCA 43074 (with a partially ossified skull), the forehead, crown and nape are brownish grey and the back olive-green. In three subadults, the head is much more grey than brown in two (RMCA 119856, 112769) and brownish grey in the other (RMCA 119858). In the two specimens with grey heads, the upperparts are washed green from the shoulders to the rump, while in the bird with a brownish-grey head the back is mainly grey with some olive-green on the rump area alone. Throat and breast: dirty white in young birds, cleaner white in older birds, subsequently becoming ever whiter on the throat and central breast, with grey confined to the breast-sides. Belly and flanks: in the youngest bird the belly is white lightly washed yellow (slightly less bright than 157: sulfur yellow) all the way to the vent. Paratype RMCA 43074 has a darker, dirty yellow, belly (closest to 56: straw yellow). Of the three older birds, only one has a hint of yellow on the flanks, the other two having creamy-white bellies. The yellow tinge on the flanks and lower belly of females is apparently not age-related, as one adult female (RMCA 112768) has a yellowish tint to the flanks and lower belly, while another (RMCA 119857) has no yellow at all on the underparts. Paratype MCZ 270944 also has a white belly, apparently with no yellow. Tail: as in male specimens, females have a dusky tip to the central pair of rectrices and T5 variably has dusky on the outer web. In addition, the upperside of the tail exhibits faint brownish barring, as in MCZ270939.

7. Size differences between sexes of *eidos*: in general, males are larger than females. Male wing length (mean = 50.00 mm, $n = 7$) is greater than in females (mean = 47.94 mm, $n = 8$) (two tailed T-test for unequal variances, $t = -2.330$, $p < 0.05$). Male tails are also longer (mean = 49.50 mm, $n = 7$) than females (mean = 44.21 mm, $n = 7$) (two-tailed T-test for unequal variances, $t = -3.141$, $p < 0.02$). No differences ($p > 0.05$) were found in bill length (male mean = 13.60 mm, female mean = 13.44 mm) and width (male mean = 4.58 mm, female mean = 4.75 mm).

Differences between subspecies of Kungwe Apalis

The described differences between *argentea* and *idos* are minor (Mayr 1957), would appear to be based on the comparison of one male *argentea* with four male and four female specimens of *idos* by Chapin (Peters & Loveridge 1942), and have not been re-examined using larger sample sizes since the type descriptions. What has been published can be summarised as follows.

1. Upperparts: *idos* is more strongly washed green on the back, rump and flanks than *argentea* (Peters & Loveridge 1942, Hall & Moreau 1970).
2. Tail: Hall & Moreau (1970) stated that *argentea* has a shorter tail than *idos*, but presented no evidence of this, and it is not mentioned in the type description of *idos* (Peters & Loveridge 1942).
3. Primaries: Peters & Loveridge (1942) described *idos* as differing from *argentea* by 'lacking the narrow silver edges on the inner primaries' described by Moreau (1941). This has not been repeated in the literature, and contrarily Hall & Moreau (1962) reported traces of silver fringes to the primary feathers in both *idos* and the *angolensis* subspecies of Buff-throated Apalis.
4. Peters & Loveridge (1942) described *idos* as differing from *argentea* by 'having the underparts white, shading to pale gray on sides of the breast'. Those of *argentea* are described as 'pale silvery-grey, nearly white on the throat and centre of the belly, darkening to blue-grey on the flanks and sides of the breast' (Moreau 1941). Thus they appear to be the same.
5. Peters & Loveridge (1942) described *idos* as differing from *argentea* in the underwing-coverts being 'pale yellowish' instead of 'pale silvery-grey' in *argentea* (Moreau 1941).

We compare biometrics for the first time.

6. Male biometrics: wing (50.0 mm) and tail length (49.0 mm) of the single specimen of *argentea* fall well within the range of wing (mean = 50.0 mm) and tail (mean = 49.5) lengths of *idos*. However, bill length (12.5 mm) and bill width (3.5 mm) of the single *argentea* fall outside the 95% confidence limits for bill length (mean \pm 1.96 S.D., 12.8–14.4 mm, $n = 5$) and bill width (mean \pm 1.96

S.D., 3.62–5.58 mm, $n = 6$) of *argentea*. This potential difference merits investigating via larger samples.

Kungwe Apalis versus Buff-throated Apalis

Differences between Kungwe Apalis and Buff-throated Apalis *sensu stricto* can be summarised as follows.

1. Female throat colour: whitish in Kungwe, whereas in Buff-throated Apalis it is variously washed buff and chestnut on the throat and breast ('chestnut-buff', 'reddish-buff' or 'light rufous'; Urban *et al.* 1997). This variation is minor compared to that shown between males of different subspecies of Buff-throated Apalis (white to black).
2. Tail gradation: see above, point 3 under Characters of Kungwe Apalis.
3. Upperparts colour: Kungwe Apalis has slightly paler grey upperparts than Buff-throated Apalis (BirdLife International 2014), although Ryan (2016) makes no comparison to Buff-throated Apalis.
4. Sexual dimorphism: according to Hall & Moreau (1970), Buff-throated Apalis is sexually dimorphic, whereas Kungwe Apalis is not. However, in Kungwe Apalis males are grey above, and females washed green on the back and wings.
5. Altitude: while Kungwe Apalis is generally found at slightly higher altitudes (1,200–2,350 m) than Buff-throated Apalis *sensu stricto* (down to sea level), the latter occurs up to 1,400 m in Kibale National Park, Uganda (MSLM pers. obs.) and even 2,400 m in western Kenya (Short *et al.* 1990). So Kungwe Apalis occurs no higher than Buff-throated Apalis, even if there is a 'mean' difference. Specimens of Kungwe Apalis were taken within the range 1,220–2,100 m (see Table 1).
6. Habitat differences: Hall & Moreau (1970) state that Kungwe Apalis 'occupies a rather different habitat' to Buff-throated Apalis. This is based on the false assumption that they occupy different altitudes, and no actual differences in preferred habitat structure or composition have been demonstrated.
7. Vocalisations: the songs are identical to the ear (pers. obs.) and no differences could be found

when investigating sonograms (Dowsett-Lemaire & Dowsett 1990).

Conclusions

Kungwe Apalis differs only slightly from Buff-throated Apalis in female throat colour, and there are no other known differences in morphology, ecology or vocalisations. Recognising Kungwe Apalis as a distinct species thus assumes that variation in female throat colour is more important than variation in male throat colour. They also show the same progression of plumage development with age, generally changing from olive to grey on the upperparts (Urban *et al.* 1997). Given the variation in male plumages displayed within Buff-throated Apalis in contrast to the minor variation in female plumages, it would be inappropriate to afford Kungwe Apalis specific status unless other differences between it and Buff-throated Apalis can be demonstrated, or it can be argued why female throat colour is more important than male throat colour. The differences between the two subspecies of Kungwe Apalis are so small and unconvincing that they can be synonymised; this is especially surprising as they were originally described as separate species.

We failed to trace the original source for inaccurate descriptions and depictions of eye, forecrown and loreal colours. These inaccuracies have probably hampered correct field identification and may have led to inaccurate population estimates, in one case where identification was based on Stevenson & Fanshawe (2002) (Manikuzwe 2011). Kungwe Apalis *A. r. argentea*, unless seen below eye level, can be safely separated by call alone from co-occurring Grey Apalis in the Albertine Rift and Brown-headed Apalis in montane western Tanzania.

Acknowledgements

Robert Dowsett, Ron Demey and Guy Kirwan helped to improve the contents of the submitted manuscript. MSLM thanks Tasso Leventis, Gerry Bertrand, Denzil Morgan, Tom Olson, Di King and Rob Leighton for their patience in the field. Tasso Leventis and Denzil Morgan kindly shared their photographs. AM's study visits to the RMCA in Tervuren were funded via an 'African Biodiversity Information Centre' grant (a programme funded by DGOS—the Belgian Cooperation Agency). We are

most grateful to Jeremiah Trimble (MCZ) for sending photographs. We acknowledge the GBIF for making available data on collections online. Hein van Grouw and Terry Walschaerts kindly confirmed specimen holdings at NHMUK and RBINS, respectively. Jon Fjeldså also kindly shared his thoughts on these birds and examined specimens in Brussels. Tom Geerinckx of RBINS kindly provided locality information for the Cyuraga specimen.

References

- BirdLife International. 2014. Species factsheet: *Apalis argentea*. www.birdlife.org (accessed 30 April 2014).
- Clements, J. F., Schulenberg, T. S., Iliff, M. J., Roberson, D., Fredericks, T. A., Sullivan, B. L. & Wood, C. L. 2015. The eBird/Clements checklist of birds of the world: v2015. www.birds.cornell.edu/clementschecklist/download/ (accessed 3 June 2016)
- Collar, N. J. & Stuart, S. N. 1985. *Threatened Birds of Africa and Related Islands*. Cambridge, UK: International Council for Bird Preservation.
- Dickinson, E. C. & Christidis, L. (eds.) 2014. *The Howard and Moore Complete Checklist of the Birds of the World*. Vol. 2. Fourth edn. Eastbourne: Aves Press.
- Dowsett, R. J. & Dowsett-Lemaire, F. (eds.) 1993. *A Contribution to the Distribution and Taxonomy of Afrotropical and Malagasy Birds*. Liège: Tauraco Press.
- Dowsett, R. J. & Forbes-Watson, A. D. 1993. *Checklist of Birds of the Afrotropical and Malagasy Regions*. Liège: Tauraco Press.
- Dowsett-Lemaire F. 1990. Eco-ethology, distribution and status of Nyungwe Forest birds (Rwanda). *Tauraco Res. Rep.* 3: 31–85.
- Dowsett-Lemaire F. & Dowsett R. J. 1990. Zoogeography and taxonomic relationships of the forest birds of the Albertine Rift Afromontane region. *Tauraco Res. Rep.* 3: 87–109.
- Gill, F. & Donsker, D. (eds.) 2016. IOC World Bird List (v. 6.2). doi: 10.14344/IOC.ML.6.2.
- Hall, B. P. & Moreau, R. E. 1962. A study of the rare birds of Africa. *Bull. Brit. Mus. Nat. Hist. Zool.* 8: 313–378.
- Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds*. London, UK: British Museum (Natural History).
- Louette, M., Meirte, D., Louage, A. & Reygel, A. 2010. *Type Specimens of Birds in the Royal Museum for Central Africa, Tervuren*. Zool. Documentation 26. Tervuren: Royal Museum for Central Africa.

- Manikuzwe, M. G. 2011. Assessment of population, distribution and habitat status of Kungwe Apalis (*Apalis argentea*) in Nyungwe National Park, Rwanda. National University of Rwanda. Unpubl. rep. (available at <http://www.readbag.com/biology-nur-ac-rw-img-pdf-manikuzwe-mg-2011>).
- Mayr, E. 1957. New species of bird described from 1941-1955. *J. Orn.* 98: 22-35.
- Moreau, R. E. 1941. New races of Pink-footed Puffback and Brown-chested Alethe and a new species of bush-warbler from Eastern Africa. *Bull. Br. Ornithol. Club* 61: 45-47.
- Moreau, R. E. 1943. A contribution to the ornithology of the east side of Lake Tanganyika. *Ibis* 85: 377-412.
- Peters, J. L. & Loveridge, A. 1942. Scientific results of a fourth expedition to forested areas in East and Central Africa. II Birds. *Bull. Mus. Comp. Zool. Harvard* 89: 217-275.
- Prigogine, A. 1967. La faune ornithologique de l'île Idjwi. *Rev. Zool. Bot. Afr.* 75: 249-274.
- Prigogine, A. 1973. La faune ornithologique de l'île Idjwi (addendum). *Rev. Zool. Bot. Afr.* 87: 189-194.
- Ryan, P. 2016. Kungwe Apalis (*Apalis argentea*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D. A. & de Juana, E. (eds.) *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona. www.hbw.com/node/58677 (accessed 25 May 2016).
- Short, L. L., Horne, J. F. M. & Muringo-Gichuki, C. 1990. Annotated check-list of the birds of East Africa. *Proc. West. Found. Vert. Zool.* 4: 61-246.
- Sinclair, I. & Ryan, P. 2010. *Birds of Africa South of the Sahara*. Second edn. Cape Town: Struik.
- Smithe, F. B. 1983. *Naturalist's Color Guide*. New York: American Museum Natural History.
- Stevenson, T. & Fanshawe, J. 2002. *Field Guide to the Birds of East Africa*. London, UK: T. & A. D. Poyser.
- Stevenson, T., Fanshawe, J. & Finch, B. W. 2014. *eGuide to Birds of East Africa*. mydigitalearth.com.
- Ulfstrand, S. 1960. The juvenile plumage of *Apalis argentea* Moreau 1941 and a note on the habitat of the species. *Bull. Br. Ornithol. Club* 80: 2-3.
- Urban, E. K., Fry, C. H. & Keith, S. (eds.) 1997. *The Birds of Africa*. Vol. 5. London, UK: Academic Press.
- ^a A. P. Leventis Ornithological Research Institute, University of Jos, PO Box 13404, Jos, Plateau State, Nigeria. E-mail: michael@birdingafrica.com
- ^b DST/NRF Centre of Excellence at the Percy FitzPatrick Institute of African Ornithology, University of Cape Town, Rondebosch 7701, South Africa.
- ^c Marang Centre for Mathematics and Science Education, Wits School of Education, Private Bag 3, Wits 2050, South Africa.
- ^d Royal Museum for Central Africa, B 3080 Tervuren, Belgium.

Received 24 June 2015; revision accepted 5 June 2016.